

# **2019 ANNUAL GROUP REPORT GR378**

MLNs 342, 346, 405, 459, 811, 816, 1033, 1039 MLs 30512, 30589

# **Mount Bonnie**

Year ending 31 December 2018

Distribution: -

**Department of Primary Industry and Resources, Darwin NT PNX Metals Ltd, Adelaide** 

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#### **ABSTRACT**

PNX Metals Ltd ("PNX") purchased the Mount Bonnie tenements from Newmarket Gold Inc in late 2014. This is the third of the Group Reports (GR378) pertaining to MLNs 342, 346, 405, 459, 811, 816, 1033, 1039 and MLs 30512 and 30589, collectively referred to as the "Mount Bonnie leases".

PNX are exploring the Mount Bonnie leases as part of the Hayes Creek Project, which also includes the Iron Blow leases located approximately 2km to the north. Mount Bonnie is a polymetallic Au, Zn, Ag, Pb and Cu deposit within the Pine Creek Orogen, discovered in the 1870's and mined sporadically up to 1985. It produced approximately 25,000oz of gold and 810,000oz of silver from oxide ore totalling about 110,000t in the open pit, as well as minor historical underground production.

During the 2018 reporting period assays awaiting from late 2017 resource extension drilling at Mt Bonnie were received, once quality controlled were incorporated into the resource model to increase the inferred and indicated resource estimations.

Pits sampled for environmental studies in late 2017 near or in tailings dams surrounding Mt Bonnie pit contained >1.53 g/t Au and >3.54% Pb from assay results received in 2018.

MSU (high grade Au and base metal zones) accompanied with zones of Low-grade Au carbonaceous zones were sent for metallurgical testing to ascertain the best method for Au and poly metallic recovery, once recommendations are ascertained they will be included in the Project's Definitive Feasibility Study (DFS).

# 1 COPYRIGHT

This document and its content are the copyright of PNX Metals Ltd (PNX). The document has been written by Charles Nesbitt and Brad Ermel for submission to the Northern Territory Department of Primary Industry and Resources as part of the tenement reporting requirements as per Regulation 87 of the Minerals Titles Act.

Any information included in the report that originates from historical reports or other sources is listed in the "References" section at the end of the document.

This report may be released to open file as per Regulation 125(3)(a).

### 2 LOCATION AND ACCESS

Mount Bonnie is located within granted Mineral Leases approximately 145 km southeast of Darwin and 11 km east-northeast of the Hayes Creek Roadhouse, not far from the first discovery of gold in the Northern Territory in 1870 at Yam Creek, during construction of the Overland Telegraph line.

Access to Mount Bonnie is via Stuart Highway to the Fountain Head turn-off (Ban Ban Road which is sealed), right onto the Mt Wells Road which is a good dirt road, and then right again onto Grove Hill Road. Dirt tracks which are generally inaccessible during the wet season lead into the Mt Bonnie site. Alternatively, the Grove Hill Road can be accessed directly from the Stuart Highway a few kilometres past the Hayes Creek Roadhouse.

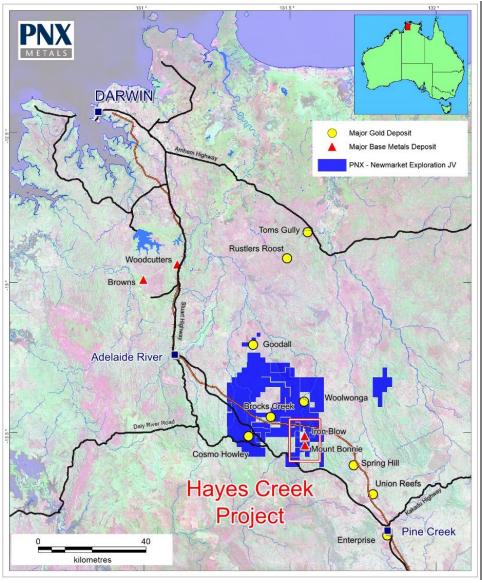


Figure 1: Mount Bonnie Location

# 3 TENEMENT DETAILS

Mount Bonnie comprises ten granted Mineral Leases totalling 116.84 hectares (table 1), all 100% owned by PNX. These leases were first granted as far back as 1975, but have changed ownership many times since. Two of the Mineral Leases (MLN816 and MLN30512) are included with the tenement package despite not being related to the Mount Bonnie deposit.

Table 1:	Mount	<b>Bonnie</b>	Tenement	Summary
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Tenement	Grant Date	Expiry Date	Area (ha)	
MLN342	07/06/1976	31/12/2026	13.75	
MLN346	02/11/1976	31/12/2026	16.0	
MLN405	01/06/2018	31/12/2037	12.0	
MLN459	27/02/1979	31/12/2020	15.0	
MLN811	14/10/1975	31/12/2025	8.09	
MLN816	22/04/1976	31/12/2019	8.09	
MLN1033	26/08/1987	31/12/2021	4.75	
MLN1039	26/08/1987	31/12/2021	1.23	
MLN30512	03/10/2014	02/10/2024	6.38	
MLN30589	03/10/2014	02/10/2024	31.55	
Total Area	116.84			

Renewal submitted

PNX purchased the Mineral Leases at Iron Blow and Mount Bonnie in 2014 from Newmarket (then Crocodile Gold Australia). The Mineral Leases are currently underlain by Exploration Leases (ELs) EL25748 to the north and east, EL23431 to the west and EL9608 to the south. The Exploration Leases subject to an earn-in arrangement with Newmarket, whereby PNX can earn 90% interest through staged expenditure commitments.

All mineral titles are situated within Pastoral Lease No. 903, Douglas, held by Dr Tony Haines, however there are currently no pastoral activities in the area. During 2016 PNX have signed a land access agreement with Douglas Station.

Native Title has been extinguished over the mineral titles, nevertheless PNX will take cultural heritage into consideration during any project development. A cultural heritage survey was undertaken in the area by Begnaze Pty Ltd in 2011. No significant historic sites or objects were identified during the survey.

Attempts to locate peripheral lease boundaries have so far been unsuccessful. It is highly likely, based on recent surveying work at Iron Blow, that the digital lease boundaries are incorrect in the order of 100m.

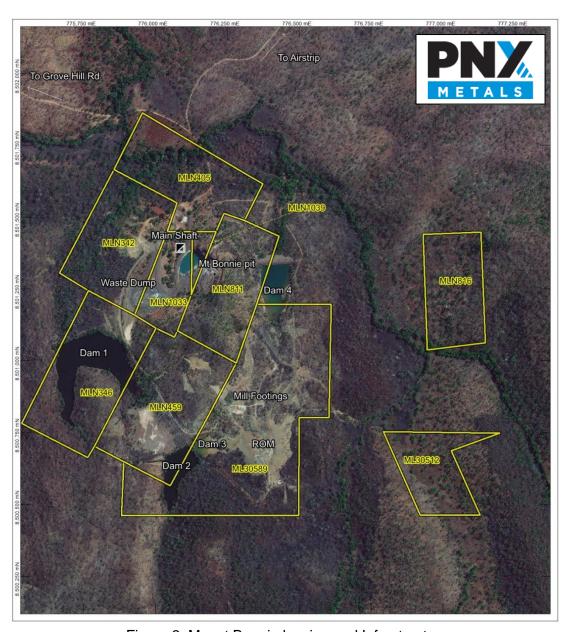


Figure 2: Mount Bonnie leasing and Infrastructure

# 4 GEOLOGICAL SETTING

## 4.1 REGIONAL GEOLOGY

The Mount Bonnie and Iron Blow deposits are situated within the Pine Creek Orogen (Figure 3), which has been interpreted as an intracratonic basin lying on Archaean basement containing a 14km thick sequence of deformed Proterozoic sediments deposited from 2.2 Ga to 1.87 Ga.

The sedimentary sequence (Figure 4) is dominated by pelitic and psammitic (continental shelf shallow marine) sediments with locally significant inter-layered cherty tuff units. Strata of the South Alligator Group and lower parts of the Finniss River Group evolved from initial low energy shallow basinal sedimentation to higher energy deeper water flysch

facies. Pre-orogenic mafic sills of the Zamu Dolerite event (~1.87 Ga) intruded South Alligator Group formations.

During the Top End Orogeny (Nimbuwah Event ~1.87–1.85 Ga) the sequence was tightly folded, faulted and pervasively altered with metamorphic grade averaging greenschist facies, with phyllite in sheared zones.

The Cullen intrusive event introduced a suite of fractionated calc-alkaline granitic batholiths into the sequence from ~1.84 to 1.80 Ga. These high temperature I-type intrusives induced strong contact metamorphic aureoles ranging up to (garnet) amphibolite facies, and created regionally extensive biotite and andalusite hornfels facies.

Less deformed Middle and Late Proterozoic clastic rocks and volcanics have an unconformable relationship to the older sequences. Flat-lying Palaeozoic and Mesozoic strata along with Cainozoic sediments and proto-laterite cementation overlie parts of the Pine Creek Geosyncline lithologies. Recent scree deposits sometimes with proto-laterite cement occupy the lower hill slopes while fluviatile sands, gravels and black soil deposits mask the river/creek flats areas.

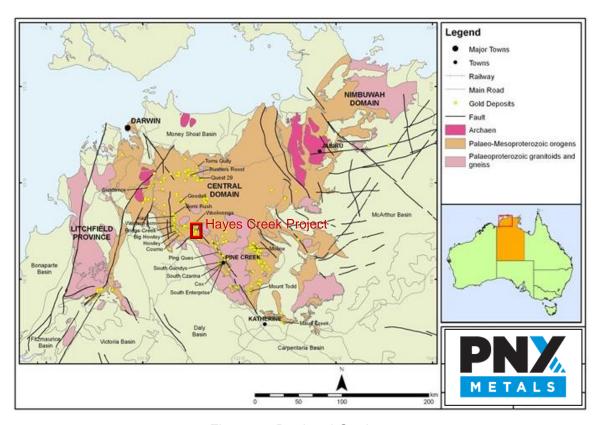


Figure 3: Regional Geology

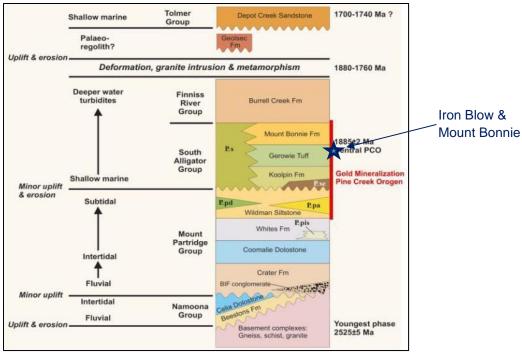


Figure 4: Stratigraphic Column, Pine Creek Orogen

#### 4.2 LOCAL GEOLOGY

The Mount Bonnie and Iron Blow deposits occupy approximately the same stratigraphic location near the bottom of the Mount Bonnie Formation in the Margaret Syncline close to the contact with the underlying Gerowie Tuff (Figure 4). Both are mineralogically similar deposits, thought to be volcanogenic massive sulphide (VMS) deposits formed at or near the sea floor by submarine felsic volcanic activity. The fumaroles circulated metal-rich hydrothermal fluids into the local sediments.

These strata were deformed at approximately 1875 Ma during an event which produced open upright folds in the sedimentary sequence. The folds strike approximately north-south and plunge to the north. The deposits were rotated down towards the north-south trending axis of the Margaret Syncline and lie more or less on their sides. Both deposits have been partly dismembered by east-west trending cross faults and sheared by thrust faults operating approximately along the bedding planes. The massive sulphides possibly represent ductile boudins in the more brittle enclosing sedimentary package and are the focus for shearing and offset faulting which occurred during the folding.

The key sedimentary units consist of dark grey, silicified felsic tuff and tuffaceous siltstone (the Gerowie Tuff), overlain by a sequence of turbidity current-related mudstones, siltstones and grey sandstones (the Mount Bonnie Formation). Mineralisation is stratiform, located near the base of the Mount Bonnie Formation sequence. Later intrusion of granite batholiths in the region has not substantially affected mineralisation. The area has remained structurally stable since Proterozoic times and has been more or less under continuous erosion.

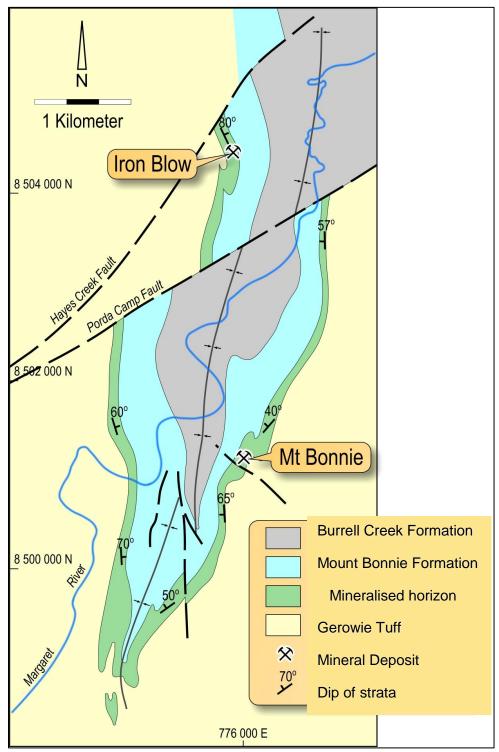


Figure 5: Local Geology

#### 5 PROJECT HISTORY

The Mount Bonnie deposit originally formed a prominent gossan capping the western side of Mount Bonnie. It was probably first discovered during the 1873 to 1874 alluvial gold rush that followed discovery of gold in the Yam Creek area during construction of the Overland Telegraph Line. It received little attention presumably because the gold was unable to be panned.

The first sub-surface prospecting at Mount Bonnie occurred around 1903, probably in response to increased interest as a result of the Broken Hill discovery in the 1890s. A 50 foot (15.2m) shaft was sunk on the gossan by Northern Territory Mining and Smelting Company and encountered significant secondary lead mineralisation, but not copper, which was the main objective.

A major period of activity occurred between 1912 and 1917 when oxide mineralisation was developed as an underground mine, with shafts, underlays and drives on three interconnected levels. A 300-foot (~91 m) adit on the 125 m RL (level 2) was driven in an easterly direction to intersect the lode at depth and at least 300 feet of lateral development was carried out in the ore. The grades from the adit level were reportedly 8% Pb, 0.8 oz/t Ag and 0.35 oz/t Au. The adit level is today observed intersecting the western wall of the pit. By 1917, a winding plant and headframe were erected over a shaft near the adit entrance (the Main Shaft), but underground development on the shaft level (Level 3) encountered zinc rich primary mineralisation, which apparently discouraged further development. A tram line was constructed to the gossan at the top of the hill, but there is no record of any ore being taken to the nearby Iron Blow smelter. Beautiful gems were apparently collected from the upper level (Level 1) of the rare lead arsenate minerals mimetite and duftite.

From 1917 through 1918, the Northern Territory Geological Survey completed three diamond drill holes to test the down dip extension of the ore. The locations and grades of these holes are not verifiable, but two out of the three holes intersected significant grades at true widths of about 10m.

No further work was undertaken at Mount Bonnie until 1948 when Enterprise Exploration Pty Ltd visited the site and took samples of the waste dumps.

In 1957, leases over Mount Bonnie were picked up by Australian Mining and Smelting Company Ltd and prospected by the exploration offshoot Enterprise Exploration Company Pty Ltd (later taken over by CRA). Detailed surface and underground mapping were undertaken at 1":100' and 1":60' scale respectively.

In 1971, the main Mount Bonnie lease (GM127B) was acquired under option by Eurabla Minerals NL. Gridding, ground magnetics and geological mapping were completed. The main shaft was dewatered and the lower level workings were partially sampled.

In 1973, the lease was optioned to Jingellic Minerals and Horizon Explorations Ltd (Horizon). Horizon completed a significant exploration program including geological mapping (1:400 scale), topographic mapping, 58 soil samples (-80 mesh for Cu, Pb and Zn), 61 rock chips samples (analysed for Cu, Pb, Zn, Ag and Se), magnetic (McPhar M-

700) and electromagnetic surveys (Geonics EM25), petrographic studies, dewatering and sampling of old workings, and drilled six diamond holes for 640.4 m (DDH1–DDH6). Four of the six holes (DDH1–4) intersected significant mineralisation. The conclusion was that the lode is generally a planar body with variable thickness and a regular westerly dip of 400 which pinches at depth and to the north. A "possible" 480,000 t were outlined but a "potential" of 1.5Mt was estimated.

From 1975 through 1979, Geopeko Ltd (Geopeko), in joint venture with BP Minerals Ltd, commenced a significant base metals exploration program targeting the sulphide lodes in the region. Eleven diamond holes were drilled in 1979 at what was called the Quest 54 prospect for 2606.4 m (Q54/S7 to Q54/S18). These holes targeted the down-dip extension of the lode from the earlier Horizon drilling. Unfortunately, there is no associated report that has been found for this work. Results were generally disappointing and showed there was little down-dip potential for base metal mineralisation, with only one hole, Q54/S7 intersecting the massive sulphide lode.

From 1979 through 1980, Jingellic Minerals, who held lease GML163B over the outcropping portion of the gossan adjacent to Geopeko, mined approximately 12,000 t of ore from a small open cut and transported it to the Mount Wells Battery.

In late 1980, following a surge in gold prices, Geopeko re-accessed and sampled the old workings and drilled a further 20 diamond drill holes for 785 m (Q54/S20 to Q54/S41) in order to investigate the known high gold and silver contents in the oxide portion of the deposit. This work defined an oxide resource of approximately 100,000 t grading 8 g/t Au and 230 g/t Ag (Eupene, 1982). Five level plans were developed for the 152 m RL (Level 1), 140 m RL, 125 m RL (Level 2 – the adit level) 111 m RL and 100 m RL (Level 3 – the tunnel level). The base of oxidation was encountered at about the 111 m RL – but note that subsequent topographic surveys show that all of these levels are probably 6 m higher than the true RL.

In 1983, the right to mine the oxide ore was obtained by The Douglas Partners, who were the directors of the then private company Henry and Walker Group Ltd. Construction of the process plant began and was commissioned in about November 1983. Open pit mining totalled 110,000 t of oxide ore, which continued up to 1985 with grade reportedly averaging 7.0 g/t Au and 230 g/t Ag for 25,000 ounces of gold and 810,000 ounces of silver. No other metals were recovered. The mill was a 10t per hour Merrill-Crowe plant selected for the high silver content of the ore. The project was the only hard rock gold operation in the Northern Territory at the time.

Henry and Walker sold out the project to Zapopan NL and in 1987, Zapopan commissioned a regional aeromagnetic survey which outlined intense magnetic anomalies over Mount Bonnie and Iron Blow.

In 1988, the plant was upgraded to a 20t per hour carbon-in-pulp (CIP) plant and the 12,000-t parcel of ore mined in 1980 was returned from the Mt Wells Battery and treated. The plant also handled ore from the nearby Golden Dyke group of gold deposits, as well as the Iron Blow deposit and it also toll treated ore from the Glencoe gold deposit. The plant was operational until 1990 and was in care and maintenance for many years after.

Following mining activity, the leases were held briefly by Dominion Mining NL, but were purchased by Territory Goldfields NL in 1995 who in turn were bought out by Northern Gold NL in 1996. Literature reviews were undertaken, but because of the low base metal prices in the late 1990s it ranked lower than other gold properties held. In 1996, an "Indicated Resource" estimated 650,000 t @ 9.0% Zn, 1.7 g/t Au, 280 g/t Ag, 2.0% Pb and 0.5 % Cu in the massive sulphide lode using polygonal techniques. However, indications from surface mapping, drilling and magnetic surveys suggested that further drilling was unlikely to substantially increase this resource. Rehabilitation of the site was undertaken in accordance with licence conditions leaving the landscape much as it is today.

GBS Gold Australia (GBS) purchased the assets of Northern Gold in 2005. In 2008, GBS conducted a detailed technical review of the Mount Bonnie and Iron Blow group of tenements and wireframed the massive sulphide mineralisation. Interpretations showed a single mineralised lens dipping 45°W from the base of the historical open pit with an estimated conceptual target of approximately 830,000 t of zinc-gold-silver mineralisation to about 200 m depth. To test the model a diamond drilling program was planned with the aid of high resolution IKONOS remote sensing data. Diamond drilling commenced (MBDH001 and MBDH002) and 286.8 m were drilled, however GBS went into receivership and the drilling program was terminated.

In June 2009, Newmarket Gold Inc (then Crocodile Gold) purchased all assets held by GBS Gold Australia and assayed the core from 2008. Both holes had intersected good zones of massive sulphides. Also in 2009, the Thunderball airborne magnetic-radiometric survey was flown over the region at 25 m line spacing in a 120–300° orientation, producing an excellent dataset. This was commissioned by Thundellara Exploration as uranium joint venture partners on the Burnside Project.

In 2011, Newmarket commissioned a versatile time domain electromagnetic (VTEM) survey at 150 m spacing over the wider Hayes Creek area which identified strong conductive and magnetic bodies over Iron Blow and Mount Bonnie, as well as identifying new target areas. The VTEM survey is valuable in mapping stratigraphy. Also in 2011, Newmarket completed a seven hole, 1309.55 m diamond drilling program (MBDH003, MBDH005, MBDH007-009, and MBDH011–012) which targeted depth extensions to the massive sulphide lode concentrated on the southern portion of the deposit. Not all holes planned were drilled due to time constraints and other priority targets and no Mineral Resource was estimated.

Sampling of remnant dumps and tailings at the ROM was carried out in 2012, along with rock chip sampling around the leases.

In 2014, Newmarket commissioned a drone survey over the deposit, producing an excellent topographic and aerial photo dataset. However, the deposit was deemed unsuitable for its Union Reefs plant, and the leases were sold to PNX (then Phoenix Copper Ltd).

In the latter part of the 2014, prior to the current reporting period, PNX commenced data compilation, geophysical targeting using VTEM, a structural study and rock chip sampling, as reported in GR187 by Newmarket.

#### 6 PREVIOUS EXPLORATION

#### 6.1 YEAR 1 - 2015

In 2015 PNX drilled 32 holes for 2914.4m, 3 face sampling traverses (in-pit) of 48.04m, 28 pXRF soil analyses, 36 composite waste rock dump samples, 17 Au soil samples, fixed loop EM (approximately 10-line km), and metallurgical test work. During the end of the reporting period, a Scoping Study commenced to investigate the possible development of the Hayes Creek Project.

#### 6.2 YEAR 2 - 2016

During 2016, completion of a scoping study, 27 RC holes and 2 diamond for a total of 1984.7m, completion of a Mineral Resource estimation, continuing metallurgical test work on core, and commencement of a prefeasibility study was achieved.

#### 6.3 YEAR 3-2017

During the 2017 reporting period, PNX completed a prefeasibility study, which included metallurgical test work, process plant design, geotechnical studies, hydrogeological studies, environmental studies, resource estimation, surveying and financial evaluation (Figure 6). Drilling during the period consisted of 1 air core hole (12m), 59 RC holes (2756m) and 9 diamond holes (736.1m) which were drilled in support of current definitive feasibility studies for a combination of sterilisation, geochemical waste rock characterisation, exploration, resource definition, geotechnical, hydrogeological and metallurgical purposes. Two of the holes had downhole wireline televiewer testing. In addition, a SkyTeam helicopter born EM system was flown at 100m spacing for approximately 9.5-line km over Mt Bonnie (and more over surrounding leases) and finally 150 soil pXRF measurements were taken.

# 7 EXPLORATION DURING THE CURRENT PERIOD

# 7.1 SUMMARY

After the successful completion of the Prefesability Study in 2017 resource extension drilling was completed in 2017, with a majority of results reported in GR378-2017 annual group report, however final assays of RC and diamond drill holes samples and composite resamples were not received until this reporting period, thus have been provided in the appendix in this report.

As part of the environmental studies for inclusion in the DFS, a waste rock characterisation programme including digging and sampling 32 shallow pits in or proximal to three tailings dams and the ROM area surrounding Mt Bonnie pit. The waste rock characterisation report is studying the relationships of Ca, Mg and S to mitigate the effects of acid forming materials should mining proceed. The study is still in progress and should be finalised in 2019.

Samples from the waste rock characterisation pits were also assayed for Au and base metals. Significant Pb >3.5% occurs in Tailings dam one (TSF1) with low levels of, also MBpit19 contained 2.6m @ 1.53 g/t Au from surface (see figure).

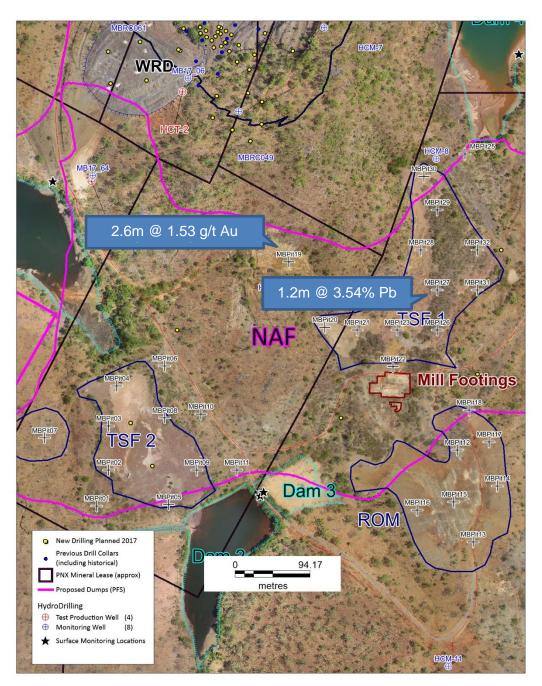


Figure 6: Locations of pit and TSF1/TSF2/TSF3 and ROM for waste characterisation sampling.

### 7.2 DEFINITIVE FEASIBILITY STUDY

A DFS is currently underway on the Project, following the successful completion of a Pre-Feasibility Study ('PFS') in July 2017 which confirms Hayes Creek to be a promising future low-cost, high margin zinc and precious metals mine. The DFS is expected to provide increased confidence in all aspects of the Project as well as investigate opportunities to improve overall Project economics.

Additional metallurgical samples generated for ongoing locked cycle and variability analysis aimed at continuing to improve metal recoveries, concentrate grades and rejection of deleterious elements.

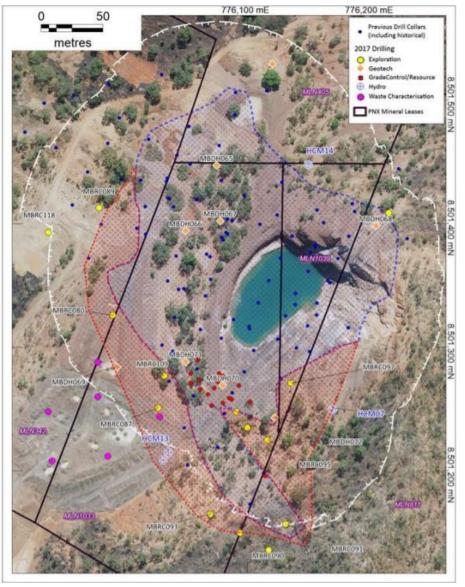


Figure 7: Drilling at Mt Bonnie - blue hashed area is the previous resource estimate projected to surface, red hashed area is an estimate of the new mineralisation projected to surface. White is the boundary of the current pit shell.

#### 7.3 MINERAL RESOURCE

CSA Global Pty Ltd (CSA Global) completed an updated JORC compliant Mineral Resource estimate in early 2017 as outlined Table 2 and digital appendices. Work is currently underway to produce an updated resource model and estimate that includes the additional drilling data produced since the 2017 report.

The Mineral Resource contains approximately 58kt of Zn metal, 18 kt of Pb metal, 4 kt of Cu metal, 6.5 million troy ounces of Ag and 70 thousand troy ounces of Au. Total metal has increased for all economic constituents of interest (Zn, Pb, Cu, Au and Ag) in the 2017 Mineral Resource estimate compared to the 2016 Mineral Resource estimate. The main reason for this was due to the inclusion of new drilling in the south of the deposit. Approximately 35% of the total Mineral Resource estimate was classified as Indicated in 2016, with the remaining 65% classified as Inferred. Approximately 83% of the total Mineral Resource estimate is classified as Indicated in 2017, with the remaining 17% classified as Inferred.

Table 2 Mt Bonnie Mineral Resource Estimate by JORC Classification, February 2017

JORC Classification	Domain	Cut-off grade	Tonnage (kt)	Zn (%)	Pb (%)	Cu (%)	Ag (g/t)	Au (g/t)	ZnEq (%)	AuEq (g/t)	Density (t/m³)
Indicated	Main Oxide/ Transitional	0.5 g/t Au	195	0.94	2.43	0.18	171	3.80	11.50	9.44	2.70
	Main Fresh	1% Zn	1,180	4.46	0.94	0.23	121	1.02	9.60	7.88	3.32
Total Indicated			1,375	3.96	1.15	0.23	128	1.41	9.87	8.11	3.23
	Main Oxide/ Transitional	0.5 g/t Au	32	0.43	1.33	0.29	74	2.28	6.37	5.23	2.55
Inferred	Main Fresh	1% Zn	118	2.91	0.90	0.15	135	0.54	7.61	6.25	3.14
	Ag Zone	50 g/t Ag	21	0.17	0.03	0.04	87	0.04	2.36	1.94	2.91
	Stockpile	0.5 g/t Au	100	0.18	0.62	0.09	55	0.76	2.97	2.44	1.50
Total Inferred			271	1.40	0.78	0.13	95	0.79	5.34	4.38	2.45
GRAND TOTAL			1,646	3.54	1.09	0.21	123	1.31	9.13	7.49	3.10

#### 7.4 METALLURGICAL TESTING

Massive sulphide and carbonaceous low-grade Au samples from four Mt Bonnie diamond drill holes were submitted to Doe Run for metallurgical test work to ascertain the best method for successful recovery of Au and base metals. The methods and results of the recovery test work are still pending with completion of the test work expected in 2019.

Exploration work in the Mt Bonnie tenements has consisted of compiling and completing miscellaneous drilling data and assay date for resource estimation and metallurgical studies for the DFS, subsequently PNX has focussed on nearby tenements for extensive exploration activities.

#### 8 RESULTS AND RECOMMENDATIONS

Definitive feasibility studies are already underway due to the positive results of the Prefeasibility Study, with a NPV10 of \$113M. The project has been significantly de-risked compared to the previous year's Scoping Study, with increased confidence in all technical disciplines.

Metallurgical test work to ascertain the appropriate method for successful recovery of Au and base metals are still pending with completion of the test work expected in 2019.

# 9 **REFERENCES**

The JORC Code, 2012. Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. The JORC Code, 2012 Edition. Prepared by: The Joint Ore Reserves Committee of The Australasian Institute of Mining and Metallurgy, Australian Institute of Geoscientists and Minerals Council of Australia (JORC).

Basile D. & Edwards M., 2013. Report on the Mineral Resources & Mineral Reserves of the Burnside Gold and Base Metal Project in the Northern Territory Australia (Crocodile Gold Corporation NI42-101 Technical Report).

Beinke L., 2014 Phoenix Copper: Mount Bonnie – Geophysics (unpublished report by Terra Resources for Phoenix Copper).

Beinke L., 2015. 2015 Hayes Creek Electromagnetic Survey (unpublished report by BlueMarbleX, Report No. BMX\_PNX\_1507\_02).

Eupene G.S., 1982. A Study of the Oxidised Zone Resources of Gold and Silver at Mount Bonnie, N.T., Australia For Douglas Station Pty Ltd (unpublished).

Eupene G.S., 1988. The Mount Bonnie Project. In Bicentennial Gold 88. Excursion Guide No.16: Northern Territory.

Eupene G.S. and Nicholson P.M., 1990. Iron Blow and Mount Bonnie Polymetallic Deposits (in Geology of the Mineral Deposits of Australia and Papua New Guinea, AUSIMM).

Goulevitch J., 1980. Stratigraphy of the Kapalga Formation North of Pine Creek and its Relationship to Base Metal Mineralization (in Proceedings of International Uranium Symposium on the Pine Creek Syncline, 1980 pp307-317).

Hall, Relph and Associates Pty Ltd, 1969. Geological Report on the Mount Bonnie Mine Northern Territory (unpublished report for Dominion Mining N.L.).

Irvine J.L., 1973. Report on a Geophysical Survey at Mt. Bonnie, N.T., for Horizon Ventures N.L. and Jingellic Minerals N.L. (unpublished).

Jettner W.A., 2007. Proposed Drilling Program for the Mount Bonnie Base Metal Deposit (unpublished report for GBS Gold Pty Ltd).

Jensen N.J., Gray G.J. and Winters R.J., 1916. The Geology of the Woggaman Province, Northern Territory of Australia, (in Bulletin N. Terr. Aust. 16).

Meakin A., 2017. Mineral Resource Estimate, Mount Bonnie VMS Deposit, Northern Territory, Australia. CSA Global Report: R100.2017. (unpublished report for PNX Metals Ltd).

Neill, A.R.,1973. Mount Bonnie Prospect Progress Report No.1 (unpublished report for Horizon Explorations Ltd).

Nicholson P.M., 1985. Iron Blow and Golden Dyke Mines Project Description for the Mount Bonnie Gold Unit Trust (unpublished).

Northern Gold NL, 2005. Mt Bonnie and Iron Blow Projects (unpublished Northern Gold NL report).

O'Connor, D., 1981. The Iron Blow and Mount Bonnie Massive Sulphide Deposits, Grove Hill Area N.T (unpublished Geopeko internal report).

Oliver T.G., 1915. Northern Territory of Australia, Report to the Administration 1914-1915 (by the Director of Mines).

Orridge G.R., 1996. Review of Mineral Resources at Mount Bonnie and Iron Blow Mines Northern Territory (unpublished report prepared for Northern Gold N.L).

Post Flight Terra 3D, 2014. Quality Report (unpublished report on quality of aerial drone survey and DTM for Crocodile Gold).

PNX Metals Ltd., 2016 Hayes Creek Project Scoping Study Executive Summary (published).

Rich H.R, Cheong G.E. and Eupene G.S., 1984. The Mount Bonnie Gold and Silver Project. The AUSIMM Conference, Darwin, N.T., August 1984.

Russell, R, 2014. Structural evaluation of the Mount Bonnie and Iron Blow deposits, Hayes Creek Project, N.T. (unpublished report for Phoenix Copper Ltd).

Shaw J., 2003. Renewal Application Report, Mt Bonnie Group MCN504, MCN505 (closed file report by Northern Gold N.L. on behalf of titleholder Territory Goldfields N.L.).

Zapopan NL, 1992. Mt Bonnie Information Memorandum (unpublished).